

LISTING OF THE CLAIMS

Claims 1-39. (Canceled)

Claim 40. (New): An optical recording method for recording mark length-modulated information with a plurality of recording mark lengths by irradiating a recording medium with a light, the optical recording method comprising the steps of:

when a time length of one recording mark is denoted  $nT$  ( $T$  is a reference clock period equal to or less than 25 ns, and  $n$  is a natural number equal to or more than 2),

dividing the time length of the recording mark  $nT$  into

$\eta_1 T, \alpha_1 T, \beta_1 T, \alpha_2 T, \beta_2 T, \dots, \alpha_i T, \beta_i T, \dots, \alpha_m T, \beta_m T, \eta_2 T$

in that order ( $m$  is a pulse division number;  $\sum_i (\alpha_i + \beta_i) + \eta_1 + \eta_2 = n$ ;  $\alpha_i$  ( $1 \leq i \leq m$ ) is a real number larger than 0;  $\beta_i$  ( $1 \leq i \leq m-1$ ) is a real number larger than 0;  $\beta_m$  is a real number larger than or equal to 0; and  $\eta_1$  and  $\eta_2$  are real numbers between -2 and 2);

radiating recording light with a recording power  $Pw_i$  in a time duration of  $\alpha_i T$  ( $1 \leq i \leq m$ ); and

radiating recording light with a bias power  $Pb_i$  in a time duration of  $\beta_i T$  ( $1 \leq i \leq m-1$ ), the bias power being  $Pb_i < Pw_i$  and  $Pb_i < Pw_{i+1}$ ;

wherein the pulse division number  $m$  is 2 or more for the time duration of at least one recording mark and meets  $n/m \geq 1.25$  for the time length of all the recording marks,

further wherein when the same pulse division number  $m$  is used on at least two recording marks with different  $n$  values, said at least two recording marks are formed by changing at least one of pulse time of  $(\alpha_1 + \beta_1)$ ,  $(\alpha_2 + \beta_1)$ ,  $(\alpha_m + \beta_{m-1})$  and  $(\alpha_m + \beta_m)$  or changing one of duty ratio of  $(\alpha_i/(\alpha_i + \beta_i))$  and  $(\alpha_i/(\alpha_i + \beta_{i-1}))$ .

Claim 41. (New): An optical recording method according to Claim 40, wherein when the same pulse division number  $m$  is used on two recording marks of which length difference is  $1T$ , said two recording marks are formed by changing at least two of  $\alpha_1$ ,  $\beta_1$ ,  $\alpha_2$ ,  $\beta_{m-1}$ ,  $\alpha_m$ , and  $\beta_m$

Claim 42. (New): An optical recording method according to Claim 41, wherein said two recording marks are formed by changing at least one of  $\beta_1$ ,  $\beta_{m-1}$ , and  $\beta_m$ .

Claim 43. (New): An optical recording method according to Claim 40, wherein  $Pw_i$  and  $Pb_i$  are represented by  $Pw$  and  $Pb$  respectively for all the value  $n$  and the value  $i$  where  $i$  is  $1 \leq i \leq m$ .

Claim 44. (New): An optical recording method according to Claim 40, wherein  $\alpha_i + \beta_i$  ( $2 \leq i \leq m-1$ ) or  $\beta_{i-1} + \alpha_i$  ( $2 \leq i \leq m-1$ ) is a constant value independently of said real number  $i$ .

Claim 45. (New): An optical recording method according to Claim 44, wherein  $\alpha_i + \beta_i$  ( $2 \leq i \leq m-1$ ) or  $\beta_{i-1} + \alpha_i$  ( $2 \leq i \leq m-1$ ) is 2 independently of said real number  $i$ .

Claim 46. (New): An optical recording method according to Claim 40, wherein  $\alpha_i$  is kept almost constant as a constant value  $\alpha_c$  where said  $i$  is ( $2 \leq i \leq m-1$ ).

Claim 47. (New): An optical recording method according to Claim 40, wherein  $\alpha_i$

( $2 \leq i \leq m-1$ ) is kept almost constant for the recording marks with the pulse division number of not less than 3.

Claim 48. (New): An optical recording method according to Claim 40, wherein when performing a mark length modulation scheme recording on the same recording medium by using a plurality of linear velocities  $v$  while keeping  $v \times T$  constant,

for  $m$  equal to or greater than 2, ( $\alpha_i + \beta_i$ ) in  $2 \leq i \leq m-1$  is kept constant independently of the linear velocity,  $Pw_i$ ,  $Pb_i$  and  $Pe$  in each  $i$  are kept almost constant independently of the linear velocity, and  $\alpha_i$  ( $2 \leq i \leq m-1$ ) is decreased as the linear velocity lowers.

Claim 49. (New): An optical recording method according to Claim 40, wherein when performing a mark length modulation scheme recording on the same recording medium by using a plurality of linear velocities  $v$  while keeping  $v \times T$  constant,

for  $m$  equal to or greater than 2, ( $\beta_{i-1} + \alpha_i$ ) in  $2 \leq i \leq m$  are kept constant independently of the linear velocity,  $Pw_i$ ,  $Pb_i$  and  $Pe$  in each  $i$  are kept almost constant independently of the linear velocity, and  $\alpha_i$  ( $2 \leq i \leq m$ ) are decreased as the linear velocity lowers.

Claim 50. (New): An optical recording method according to Claims 48 or 49, wherein  $\alpha_{iT}$  ( $2 \leq i \leq m-1$ ) are kept almost constant independently of the linear velocity.